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10/707,646	12/30/2003	Chun-Huai Li	ADTP0085USA	1645

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
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EXAMINER	
NGUYEN, KEVIN M	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
02/06/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	**Application No.** 10/707,646	**Applicant(s)** LI, CHUN-HUAI	
	Examiner Nguyen M. Kevin	**Art Unit** 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/20/2007 has been entered. An action on the RCE follows:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 11-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shieh** et al (US 5,748,160, hereinafter **Shieh**) in view of **Sung** et al (US 6,950,082, hereinafter **Sung**).

4. <u>As to claim **11**</u>, **Shieh** teaches an active matrix display device (Fig. 3) comprising:

a plurality of pixels having a plurality of scanning lines, a plurality of data lines (a plurality of row lines and a plurality of column lines, col. 4, lines 14-16);

a plurality of pixels (pixels, col. 4, line15), each of the pixels (40) electrically connected to one corresponding scanning line and one corresponding data lines (col. 4, lines 9-16), each of the pixels comprising:

a storage capacitor *(23, fig. 1 is equivalent to fig. 3);*

a single first active device (50) having a first end (54) electrically connected to the corresponding scanning line (the row line), a second end (53) electrically connected to the corresponding data line (the data line), and a third end (51);

a plurality of active-type light emitting devices (45, 46, 47) electrically connected in parallel with each other (45, 46, 47), each of the active-type light emitting devices (45) being connected between a source of first potential (ground) and a source of second potential (60), each of the active-type light emitting devices (45) respectively comprising:

a light emitting device (45) electrically connected to the source of second potential (ground); and

a second active device (43) having a fourth end (52) electrically connected to the third end (51), a fifth end (48) electrically connected to the source of first potential (ground), and a sixth end (44) electrically connected to the light emitting device (45), wherein the single first active device (50) switched each of the active-types light emitting device (45, 46, 47); and

a storage capacitor (23) having a first electrode electrically connected to the third end (51) of the single first active device (50) and the fourth end of the active-type light emitting devices (45, 46, 47), and second electrode electrically connected to the source of the first potential end (ground, col. 4, line 66 through col. 5-29).

Shieh fails to teach a plurality of thin film transistors connected in parallel to a plurality of light emitting devices.

Sung teaches a plurality of thin film transistors (M21, M22, and M23) coupling in parallel to a light emitting device (235), each of the plurality of thin film transistors (M21, M22,

and M23) being connected between a source of first potential (Vdd) and a source of second potential (Vss), see figure 2, column 3, lines 15-22.

Col. 4, lines 29-33 of Shieh discloses while transistors 43 are illustrated as n-type devices, it would have been understood by those skilled in the art that diodes 45, 46, and 47 could be reversed and p-type devices could be used, if desired to substitute with Sung's thin film transistors (M21, M22, and M23). Sung's benefit reduces the complexity of manufacturing, stabilize the gate-to-source voltage, and a switch between its source and a reference voltage power supply to avoid a situation in which the transistor is always turn on despite the voltage level of the data signal, col. 1, lines 53-55, and col. 4, lines 22-29 of Sung. Thus, it would have been obvious to a person of ordinary skill in the art to apply Sung to Shieh to achieve the predictable result. Using the known technique of Sung would have been obvious to one of ordinary skill.

As to claim 12, Shieh teaches the pixel structure of claim 1, wherein the single first active device (50) is a first thin film transistor, and the first end is a gate electrode (54) of the first thin film transistor, the second end is a drain electrode (51) of the first thin film transistor, and the third end is a source electrode (53) of the first thin film transistor *(50, fig. 3, col. 4, lines 29-33).*

As to claim 13, Shieh teaches the pixel structure of claim 1, wherein the storage capacitor (23) is electrically connected between the third end (51) of the single first active device (50) and the source of first potential *(ground, fig. 3).*

As to claim 14, Shieh teaches the pixel structure of claim 3, wherein the source of first potential is utilized for supplying a constant potential *[it is noted a voltage source 60 is a constant DC voltage source].*

As to claim 15, Shieh teaches the pixel structure of claim 1, wherein each of the active-type light emitting devices (45) comprises:

a second active device (43) having a fourth end (52) electrically connected to the third end (51) of the single first active device (50), a fifth end (48) connected to the source of first potential (ground), and a sixth end (44), wherein the fourth end (52) is the switching end *(a gate of the transistor 43 is switching on and off);* and

a light emitting device (45) having a seventh end connected to the sixth end and an eighth end connected to the source of second potential *(60, see Fig. 3).*

As to claim 16, Shieh teaches the pixel structure of claim 5, wherein when an electrical shortage occurs in one of the active-type light emitting devices (45, 46, 47), the pixel structure displays an image via the other active-type light emitting devices *(columns 5-6 and Figures 3-5 of Shieh reference clearly show the active matrix display structure with scan lines (the gate line) and data lines (the data line). It is inherent in any active matrix display that other pixel will work when one pixel goes bad or become defective).*

As to claim 17, Shieh teaches the pixel structure of claim 5, wherein each of the second active devices (43) comprises a second thin film transistor (col. 4, lines 29-33).

As to claim 18, Shieh teaches the pixel structure of claim 7, wherein the fourth end is a gate electrode (52) of the second thin film transistor (43), the fifth end is a source electrode (44) of the second thin film transistor (43), and the sixth end is a drain electrode (48) of the second thin film transistor (43).

As to claim 19, Shieh teaches the pixel structure of claim 5, wherein each of the light emitting devices comprises an organic light emitting diode (OLED) *(col. 4, lines 34-36).*

As to claim 20, Shieh teaches the pixel structure of claim 9, wherein the seventh end is an anode of the light emitting device, and the eighth end serves as a cathode of the light emitting device *(at least a OLED (45) has an anode and a cathode, col. 4, lines 20-22).*

The limitation of claim 20 is the same as those of claim 12 and therefore the claim will be rejected using the same rationale.

The limitation of claim 21 is the same as those of claim 13 and therefore the claim will be rejected using the same rationale.

The limitation of claim 22 is the same as those of claim 14 and therefore the claim will be rejected using the same rationale.

The limitation of claim 23 is the same as those of claim 15 and therefore the claim will be rejected using the same rationale.

The limitation of claim 24 is the same as those of claim 16 and therefore the claim will be rejected using the same rationale.

The limitation of claim 25 is the same as those of claim 17 and therefore the claim will be rejected using the same rationale.

The limitation of claim 26 is the same as those of claim 18 and therefore the claim will be rejected using the same rationale.

5. As to **claim 19, Shieh** teaches an active matrix organic light-emitting display device comprising:

a plurality of scanning lines, a plurality of data lines (see col. 4, lines 51-65);

a plurality of pixels, each of the pixels electrically connected to one corresponding scanning line and one corresponding data line, (see col. 4, lines 8-17), each of the pixel comprising:

a single first active device (50) having a first end (54) electrically connected to the corresponding scanning line (57), a second end (53) electrically connected to the corresponding data line (55), and a third end (51);

a plurality of light emitting devices, each of the light emitting devices being electrically connected to a source of second potential in parallel (OLEDs 45, 46, 47);

a second active device, wherein the second active device has a fourth end electrically connected to the first end, a fifth end electrically connected to a source of first potential, and a sixth end electrically connected to one of light emitting devices (a thin film transistor 43); and

a storage capacitor (23, fig. 1 is equivalent to fig. 3) having a first electrode electrically connected to the third end (51) of the single first active device (50) and fourth end of each second active device, and a second electrodes electrically connected to the source of first potential end (the ground).

Shieh fails to teach a plurality of thin film transistors connected in parallel to a plurality of light emitting devices.

Sung teaches a plurality of second active devices (M21, M22, and M23), wherein each of the second active devices has a fourth end electrically connected to the first end, a fifth end electrically connected to a source of first potential (Vdd), and a sixth end electrically connected to one of light emitting devices (235), see figure 2, col. 3, lines 15-22.

Col. 4, lines 29-33 of Shieh discloses while transistors 43 are illustrated as n-type devices, it would have been understood by those skilled in the art that diodes 45, 46, and 47 could be reversed and p-type devices could be used, if desired to substitute with Sung's thin film transistors (M21, M22, and M23). Sung's benefit reduces the complexity of manufacturing, stabilize the gate-to-source voltage, and a switch between its source and a reference voltage power supply to avoid a situation in which the transistor is always turn on despite the voltage level of the data signal, col. 1, lines 53-55, and col. 4, lines 22-29 of Sung. Thus, it would have been obvious to a person of ordinary skill in the art to apply Sung to Shieh to achieve the predictable result. Using the known technique of Sung would have been obvious to one of ordinary skill.

6. Claims 11-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shieh** et al (US 5,748,160, hereinafter **Shieh**) in view of **Friend** et al (US 6,429,601, hereinafter **Friend**).

7. As to claim **11**, **Shieh** teaches an active matrix display device (Fig. 3) comprising:

a plurality of pixels having a plurality of scanning lines, a plurality of data lines (a plurality of row lines and a plurality of column lines, col. 4, lines 14-16);

a plurality of pixels (pixels, col. 4, line15), each of the pixels (40) electrically connected to one corresponding scanning line and one corresponding data lines (col. 4, lines 9-16), each of the pixels comprising:

a storage capacitor *(23, fig. 1 is equivalent to fig. 3);*

a single first active device (50) having a first end (54) electrically connected to the corresponding scanning line (the row line), a second end (53) electrically connected to the corresponding data line (the data line), and a third end (51);

a plurality of active-type light emitting devices (45, 46, 47) electrically connected in parallel with each other (45, 46, 47), each of the active-type light emitting devices (45) being connected between a source of first potential (ground) and a source of second potential (60), each of the active-type light emitting devices (45) respectively comprising:

a light emitting device (45) electrically connected to the source of second potential (ground); and

a second active device (43) having a fourth end (52) electrically connected to the third end (51), a fifth end (48) electrically connected to the source of first potential (ground), and a sixth end (44) electrically connected to the light emitting device (45), wherein the single first active device (50) switched each of the active-types light emitting device (45, 46, 47); and

a storage capacitor (23) having a first electrode electrically connected to the third end (51) of the single first active device (50) and the fourth end of the active-type light emitting devices (45, 46, 47), and second electrode electrically connected to the source of the first potential end (ground, col. 4, line 66 through col. 5-29).

Shieh fails to teach a plurality of thin film transistors connected in parallel to a plurality of light emitting devices.

Friend teaches a plurality of thin film transistors (15a-d) coupling in parallel to a plurality of light emitting devices (19a-d), each of the plurality of thin film transistors (15a-d) being connected between a source of first potential (a common line or ground) and a source of second potential (a common cathode 20), see figure 5, column 5, lines 34- 48.

Col. 4, lines 29-33 of Shieh discloses while transistors 43 are illustrated as n-type devices, it would have been understood by those skilled in the art that diodes 45, 46, and 47

could be reversed and p-type devices could be used, if desired to substitute with Friend's thin film transistors (15a-d), because Friend teaches the switching transistors 15a-d corresponding to a transistor 9 in figure 1, see col. 5, lines 47-48 of Friend. Thus, it would have been obvious to a person of ordinary skill in the art to apply Friend to Shieh to achieve the predictable result. Using the known technique of Friend would have been obvious to one of ordinary skill.

As to claim 12, Shieh teaches the pixel structure of claim 1, wherein the <u>single</u> first active device (50) is a first thin film transistor, and the first end is a gate electrode (54) of the first thin film transistor, the second end is a drain electrode (51) of the first thin film transistor, and the third end is a source electrode (53) of the first thin film transistor *(50, fig. 3, col. 4, lines 29-33).*

As to claim 13, Shieh teaches the pixel structure of claim 1, wherein the storage capacitor (23) is electrically connected between the third end (51) of the <u>single</u> first active device (50) and the source of first potential *(ground, fig. 3).*

As to claim 14, Shieh teaches the pixel structure of claim 3, wherein the source of first potential is utilized for supplying a constant potential *[it is noted a voltage source 60 is a constant DC voltage source].*

As to claim 15, Shieh teaches the pixel structure of claim 1, wherein each of the active-type light emitting devices (45) comprises:

a second active device (43) having a fourth end (52) electrically connected to the third end (51) of the <u>single</u> first active device (50), a fifth end (48) connected to the source of first potential (ground), and a sixth end (44), wherein the fourth end (52) is the switching end *(a gate of the transistor 43 is switching on and off);* and

a light emitting device (45) having a seventh end connected to the sixth end and an eighth end connected to the source of second potential *(60, see Fig. 3).*

As to claim 16, Shieh teaches the pixel structure of claim 5, wherein when an electrical shortage occurs in one of the active-type light emitting devices (45, 46, 47), the pixel structure displays an image via the other active-type light emitting devices *(columns 5-6 and Figures 3-5 of Shieh reference clearly show the active matrix display structure with scan lines (the gate line) and data lines (the data line). It is inherent in any active matrix display that other pixel will work when one pixel goes bad or become defective).*

As to claim 17, Shieh teaches the pixel structure of claim 5, wherein each of the second active devices (43) comprises a second thin film transistor (col. 4, lines 29-33).

As to claim 18, Shieh teaches the pixel structure of claim 7, wherein the fourth end is a gate electrode (52) of the second thin film transistor (43), the fifth end is a source electrode (44) of the second thin film transistor (43), and the sixth end is a drain electrode (48) of the second thin film transistor (43).

As to claim 19, Shieh teaches the pixel structure of claim 5, wherein each of the light emitting devices comprises an organic light emitting diode (OLED) *(col. 4, lines 34-36).*

As to claim 20, Shieh teaches the pixel structure of claim 9, wherein the seventh end is an anode of the light emitting device, and the eighth end serves as a cathode of the light emitting device *(at least a OLED (45) has an anode and a cathode, col. 4, lines 20-22).*

The limitation of claim 20 is the same as those of claim 12 and therefore the claim will be rejected using the same rationale.

The limitation of claim 21 is the same as those of claim 13 and therefore the claim will be rejected using the same rationale.

The limitation of claim 22 is the same as those of claim 14 and therefore the claim will be rejected using the same rationale.

The limitation of claim 23 is the same as those of claim 15 and therefore the claim will be rejected using the same rationale.

The limitation of claim 24 is the same as those of claim 16 and therefore the claim will be rejected using the same rationale.

The limitation of claim 25 is the same as those of claim 17 and therefore the claim will be rejected using the same rationale.

The limitation of claim 26 is the same as those of claim 18 and therefore the claim will be rejected using the same rationale.

8. As to **claim 19**, **Shieh** teaches an active matrix organic light-emitting display device comprising:

a plurality of scanning lines, a plurality of data lines (see col. 4, lines 51-65);

a plurality of pixels, each of the pixels electrically connected to one corresponding scanning line and one corresponding data line, (see col. 4, lines 8-17), each of the pixel comprising:

a <u>single</u> first active device (50) having a first end (54) electrically connected to the corresponding scanning line (57), a second end (53) electrically connected to the corresponding data line (55), and a third end (51);

a plurality of light emitting devices, each of the light emitting devices being electrically connected to a source of second potential in parallel (OLEDs 45, 46, 47, fig. 3);

a second active device, wherein the second active device has a fourth end electrically connected to the first end, a fifth end electrically connected to a source of first potential, and a sixth end electrically connected to one of light emitting devices (a thin film transistor 43); and

a storage capacitor (23, fig. 1 is equivalent to fig. 3) having a first electrode electrically connected to the third end (51) of the single first active device (50) and fourth end of each second active device, and a second electrodes electrically connected to the source of first potential end (the ground).

Shieh fails to teach a plurality of thin film transistors connected in parallel to a plurality of light emitting devices.

Friend teaches a plurality of thin film transistors (15a-d) coupling in parallel to a plurality of light emitting devices (19a-d), each of the plurality of thin film transistors (15a-d) being connected between a source of first potential (a common line or ground) and a source of second potential (a common cathode 20), see figure 5, column 5, lines 34- 48.

Col. 4, lines 29-33 of Shieh discloses while transistors 43 are illustrated as n-type devices, it would have been understood by those skilled in the art that diodes 45, 46, and 47 could be reversed and p-type devices could be used, if desired to substitute with Friend's thin film transistors (15a-d), because Friend teaches the switching transistors 15a-d corresponding to a transistor 9 in figure 1, see col. 5, lines 47-48 of Friend. Thus, it would have been obvious to a person of ordinary skill in the art to apply Friend to Shieh to achieve the predictable result. Using the known technique of Friend would have been obvious to one of ordinary skill.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen M. Kevin whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Nguyen/
Kevin M. Nguyen
Examiner
Art Unit 2629